Name: Shih-Yu Chen (陳世洧)
Title: Assistant Research Fellow
Affiliated Department: Institute of Biomedical Sciences, Academia Sinica
E-mail: sychen@ibms.sinica.edu.tw

Brief CV （簡歷，一頁 A4）

Dr. Chen completed his MD degree in National Taiwan University, and received PhD degree from University of California, Davis, USA. He then worked as a postdoctoral fellow and reseach scientist in Prof. Garry Nolan`s lab at Stanford University, where he focused on developing new single cell analysis technologies. Dr. Chen has successfully developed single-cell analysis assays to study proteins, RNAs, and genome accessibility in cells and tissue sections using mass cytometry and multiplexed imaging platform, which enables the integration of multi-omic information at the single cell level. He also developed a toolkit for super-resolution multi-plexed imaging to extend the proteomic profiling to the resolution of sub-cellular organization. After then, he was recruited to the institure of biomedical sciences, Academia Sinica as an Assistant Research Fellow in 2019.

His current research directions focus on applying multi-omic single cell analysis platforms to investigate how the immune system responds to sustained stimulations in the context of infections, cancers or degenerative diseases. He received several awards, including Career Development Award and 新聘學術研究獎 from academia sinica. He also serves as a guest editor and editorial reviewer of Frontiers in Immunology and reviewers of several journals, such as Scientific Reports, Brain Research, Neuro-Oncology…etc.

Title: Multi-omic approaches towards molecular profiling of human diseases

Name: Shih-Yu Chen (陳世淯)
Affiliated Deaprtment / E-mail: Institute of Biomedical Sciences, Academia Sinica/ sychen@ibms.sinica.edu.tw

---

Speech Abstract （演講摘要，一頁 A4）

By taking advantage of the multiparametric multi-omic single cell analysis platforms, thorough characterization of complex cellular samples could be achieved. For example, within host-pathogen interactions, we demonstrated that natural killer cell subsets are correlated with the virus clearance of SARS-CoV-2 and the up-regulation of the inhibitory ligands to NK cells could be a mechanism of immune evasion utilized by SARS-CoV-2. In the COVID-related lung fibrosis, the interactions between fibroblasts and macrophages are critical for the disease progression. Similarly, within the tumor microenvironment, sustained antigen stimulations from the environment could drive the differentiations of immune cells. Together, our data demonstrated that by systematically profiling the cell-cell interactions within the microenvironment, new principles of immune regulations in response to cancers or invading pathogens could be revealed.